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REMARKS/ARGUMENTS

Prior to entry of this amendment, claims 1-9, 17, and 19 were under consideration, claims 10 and 18 having been canceled, and claims 11-16 withdrawn. In the August 31, 2004 Office Action, claims 1-9, 17, and 19 were rejected under 35 U.S.C. § 112 for indefiniteness and lack of enablement and written description, and under 35 U.S.C. § 103 for obviousness. The specification was also objected to for lack of enablement and written description. The present amendment amends claims 1 and 17 and adds new claims 20-25.

1. Claim Rejections under 35 U.S.C. § 112, ¶1

Claims 1, 17 and 19 were rejected "as containing subject matter which was not [enablingly] described in the specification" because "the requirement that the inventions overall axial length be 'less than 22 millimeters' lacks enablement in defining how small the invention can physically be and still perform its required function [and] the specification lacks enablement in defining how to make and/or use the invention with an overall axial length near the lower limit of the axial length range specified." [Office Action, ¶15]. This rejection incorrectly includes claim 19, in which no axial length range or limit is specified.

As to claims 1 and 17, the grounds for this rejection are generally traversed in section 3 below, but to expedite prosecution, the present amendments obviate the rejection of these claims by eliminating their requirement that the overall axial length be less than 22mm.

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2. Claim Rejections under 35 U.S.C. § 112, ¶2

The same claims were also rejected because "the phrase 'the overall axial length is less than 22 millimeters' renders the claims indefinite because the claims include elements not actually disclosed" [Office Action, ¶16]. This rejection also incorrectly includes claim 19, which does not contain such a phrase. Likewise, as to claims 1 and 17, the grounds for this rejection are generally traversed in section 3 below, but to expedite prosecution, the present amendments obviate the rejection of these claims by eliminating their requirement that the overall axial length be less than 22mm.

3. Objection to the Specification under 35 U.S.C. § 112, ¶1

The specification was objected to as lacking written description and enablement because it fails to "specify a lower limit to the axial length and therefore the applicants invention has an overall axial length range between 0 and less than 22 millimeters" and because it "does not disclose how and in what manner applicant's invention can be manufactured near or at it's lower axial length limit and still be functional." [Office Action, ¶17]. This objection (first raised more than three years after the application was filed) is believed to be obviated by the amendments to claims 1 and 17 noted above, since the written description and enablement requirements are analyzed with respect to the claims. MPEP 2163.01; 2164.04 ("Before any analysis of enablement can occur, it is necessary for the examiner to construe the claims."). In any case, the objection is further traversed as follows.

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It is axiomatic that "A patent need not teach, and preferably omits, what is well known in the art." MPEP 2164.01. The present specification discloses an initiator for use with an airbag inflator (e.g., inflator 100 in ¶16 & Fig. 9), the useful and requisite size ranges of both of which were well-known in the art at the time of filing. Statements that "the specification does not specify a lower limit [or how the] invention can be manufactured near or at [its lower limit]" do not provide a prima facie case of lack of written description or enablement that identifies pertinent claim limitations and includes findings based on the applicable knowledge of one of ordinary skill in the art as required by MPEP 2163 & 2164.

To the contrary, the present invention is adequately described and enabled. Initiator patents generally do not disclose specific dimensional ranges unless they relate to a point of novelty. Here, the point of novelty is in the configuration of the parts so as to result in an initiator that has onboard circuitry yet is compact enough (e.g., within 22mm long) to be used with a standard size airbag inflator. The theoretical lower size limit, and how to make an embodiment of that size, is no more relevant to this invention than it is to any of the myriad other initiator patents that do not disclose such superfluous information.

It is also noted that the invention is not limited to 22mm - the disclosure of a 21mm (¶19) and a 22mm (claim 10) overall axial length in the original disclosure are expressed as examples only, and the useful upper limit flows solely from the context, i.e., an automotive initiator.

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4. Obviousness Rejections Based on U.S. Pat. No. 6,079,332

Independent claim 1 was rejected as obvious over U.S. Pat. No. 6,079,332 to Marshall et al. ("Marshall") in view of U.S. Pat. No. 5,230,287 to Arrell et al. ("Arrell"), and independent claims 17 and 19 were rejected as obvious over that combination further in view of U.S. Pat. No. 5,200,574 to Cunningham et al. ("Cunningham").

Claims 1 and 17 have both been amended to include the new limitation that the "exposed portion [the initiator electrical interface] includes at least one exposed electrical contact that is directly lateral to at least part of said control circuitry," which feature is not taught or suggested by Marshall, Arrell, or Cunningham or any combination thereof. It is this novel and non-obvious reconfiguring of the electrical contacts of an automotive initiator (which as is well-known in the art must comply with exacting standard dimensions) that makes it possible to incorporate on-board circuitry into the body of such an initiator without the necessity that it reside within the gas seal area. As discussed in paragraph 16 of the specification, that results in the circuitry being relatively more protected and having a greater chance of survival after deployment.

It is also submitted that claim 19 is not obvious over Marshall in view of Arrell and Cunningham. First, with respect to paragraph 7 of the Office Action, limiting the type of claimed initiator to an automotive initiator does result in a structural difference; just as for example a land vehicle necessarily structurally differs from an aquatic vehicle, so too does an automotive initiator from any mining and blasting

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detonator such as that of Marshall. Likewise, it is known in the art that such mining and blasting detonators are not "capable of performing the intended use" of automotive initiators. Second, due to the significant structural and functional differences between initiators and blasting detonators, there was no motivation for one of ordinary skill in the art on July 5, 2001 to combine the teachings of Marshall with those of references such as Arrell and/or Cunningham. Third, there was no motivation to attempt to adapt on-board circuitry of a blasting detonator such as taught by Marshall into an automotive initiator as claimed, because it was taught away from by axial length constraints that are much more imposing in automotive initiators than in blasting detonators - without hindsight relying on the disclosure of the present application, one of ordinary skill in the art would have had to exercise inventive faculties in order to find a way to combine such references to fit on-board control circuitry into an automotive initiator. Fourth, one of ordinary skill in the art would have been taught away from modifying (even the electrically signaled version of) the blasting detonator of Marshall with the mating connector of Cunningham because there is no purpose in adding such additional connector hardware to blasting detonators as there is in the context of automotive initiators. Fifth, the mating connector of Cunningham is standard in size, not "enlarged" as that term is used in the present specification, which refers to its unique enlargement that accommodates an enlarged initiator containing on-board circuitry.

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Finally, it is noted that dependent claims 3, 24, and 25 each contain the further limitation that the "assembly includes a gas seal area, and said control circuitry is remote from said gas seal area." This limitation is additionally non-obvious because as discussed in paragraph 16 of the specification, keeping on-board circuitry in a relatively less exposed and stressed part of the initiator as is enabled by the present application results in better protection and a greater chance of survival after deployment, which is not a requirement applicable to blasting detonators.

Conclusion

A two-month extension is hereby requested, and Form PTO-2038 to cover the corresponding fee is included herewith. If any further fees are required at present, please charge them to the undersigned's Deposit Account No. 502502.

Favorable action is respectfully requested on this application in light of the foregoing amendments and remarks. The Examiner is kindly invited to contact the undersigned by telephone if it may help expedite the prosecution of this application.

Respectfully submitted,

Dated: January 31, 2005

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